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MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

February 16, 1982

TO: John Bohunsky, Chief, Field Operations

FROM: Bill Stone, District One

SUBJECT: Pennwalt Chemical Corp., Riverview
Sampling of old storage pond and 005 area

The old storage pond (impoundment lagoon) and the amber, water puddles around the 005 lagoon were inspected and sampled on June 22, 1981 as requested by Environmental Enforcement Division.

Jack Lewis of Pennwalt indicated that prior to 1969 the impoundment lagoon was used as the sludge dewatering and storage (disposal) lagoon for the east and west plants. The various ponds and lagoons were dredged annually and the resultant sludges placed in the impoundment lagoon. The lagoon was dewatered by digging a hole through the dike allowing drainage to Monguagon Creek via the pond system through outfall 006. Between 1969 and 1978 only the sludges from pond 4 (west plant) were placed in the lagoon. Since 1978 the lagoon has not been used nor dewatered. It is my understanding that sludges have never been removed from the lagoon.

At the time of my inspection, after a period of wet weather, the lagoon had at least 2 feet of freeboard. It was completely surrounded by a broad berm which was covered with a heavy growth of Phragmites sp. (Common Reed, a salt tolerant tall grass). To Mr. Lewis' knowledge there has not been an overflow or discharge from the lagoon since 1978. He indicated that it is nearly dry during late summer and the sludge on the north side becomes exposed. Maximum water depth appears to be 3-4 feet. Sludge depth is unknown but probably great.

The lagoon water surface was sampled near the south east berm. Water depth was about 1 ft. The water was acidic, pH, 4.9, and high in ammonia nitrogen, 95 mg/l, and sulfates, 2200 mg/l (see attached table). Other parameters were not at unusual levels.

It is unlikely that the lagoon will discharge overland to a surface water. If, however, the contents were to reach a more alkaline natural waterbody, toxic undissociated ammonia (NH_3) would be formed. The presence of ammonia and sulfate is not unexpected since the west plant produces a number of organic sulfur and nitrogen compounds. It is probable that the contents percolate through the sludges into the groundwater. Core samples and groundwater samples may be appropriate.

Mr. Lewis felt the amber colored puddles around the 005 lagoon (east plant) were residual from a brine leak. A brine line that runs adjacent to the lagoon ruptured and leaked for several hours sometime in 1980. Results of my samples support his assumption. The chlorides, conductively and pH were high (see table). Levels of other constituents were not unusual.

BS/pls
cc: Bill Murphy, Environmental Envorcement Division